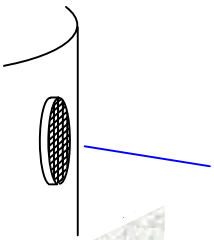
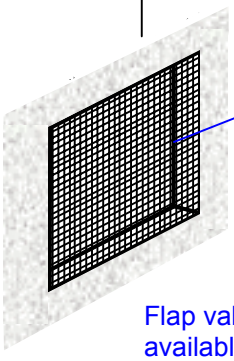
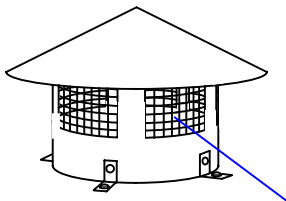
# *Drinking Water Tech Tips:*
# Sanitary Protection of Reservoirs – Vents

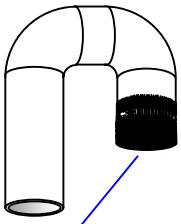
## Vents:



**Poor Designs**
Vents are screened but are not protected from rain and windborne contaminants.





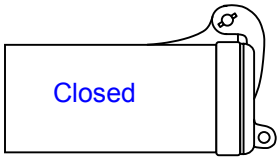


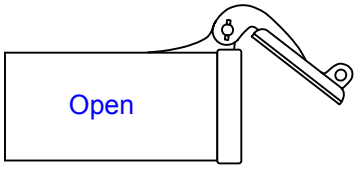
**Good Designs**
Vents are inverted, screened and are adequately protected from rain and windborne contamination.

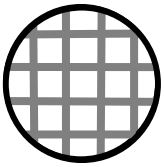
Screened Openings

## Overflow & Drain Lines:

**Flap Valves**
Flap valves are commercially available for overflow and drain lines. They help to exclude birds, bats and other animals and still allow the free flow or water.

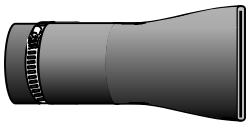


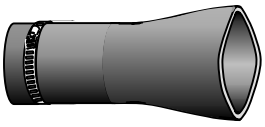



No. 4 mesh
To Scale

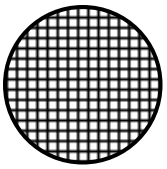
**Flexible Check Valves**
Elastomeric check valves are commercially available for overflow and drain lines. Some of the valves are designed to fit inside the pipe.



Closed



Open



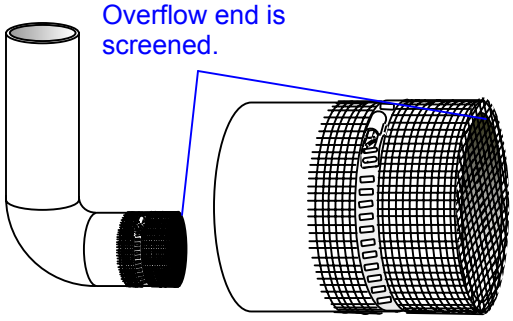
No. 24 mesh
To Scale

**Poor Design**

Open end is not protected from birds, bats, or insects.

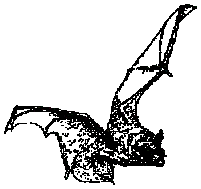
**Good Design**

Overflow end is screened.



It is very important to inspect all screens for damage at least annually

Bats can squeeze into very small spaces and birds may damage screens to gain entrance into a storage tank.



**Stored Water Sanitary Protection**: Storage tanks must have dedicated vents, overflow and discharge pipes, and drain lines to operate. These are potential entry points that must be protected from birds, bats, other animals, insects, rain, and wind-borne contamination. There must be adequate sanitary protection to prevent the water supply from being contaminated. The potential for vandalism, physical damage, and icing should also be considered when choosing a design. **Vents** must be inverted and screened. No. 4 mesh non-corrodible screen may be used for elevated tanks. Ground level or underground storage facilities should have the vent opening 24 to 36 inches above the roof or ground and protected with a No. 24 inch mesh non-corrodible screen. **Overflow and drain lines** must have a non-corrodible No. 4 mesh screen or mechanical device secured over the discharge end. The overflow line should extend down to an elevation between 12 and 24 inches above the ground level and discharge into a splash screen or rocked area. No overflow or drain line should be connected directly to a sewer or storm drain without a properly designed air-gap, and the discharge ends must be located where the pipe end can be routinely inspected.

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

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For more information, contact your Office of Drinking Water Regional Office. They are open Monday through Friday, 8:00 a.m. to 5:00 p.m. If you have an after-hours emergency, call 1-877-481-4901.

**Eastern Regional Office**, 509-456-3115
Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima counties.

**Northwest Regional Office**, 253-395-6750
Island, King, Pierce, San Juan, Skagit, Snohomish, and Whatcom counties.

**Southwest Regional Office**, 360-664-0768
Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum counties.